

PROCEEDINGS  
OF THE  
BIOLOGICAL SOCIETY OF WASHINGTON

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A KEY TO THE CRASSULUS GROUP OF *APHODIUS*  
WITH DESCRIPTIONS OF NEW SPECIES FROM  
TEXAS AND MARYLAND (COLEOPTERA:  
SCARABAEIDAE: APHODIINAE)

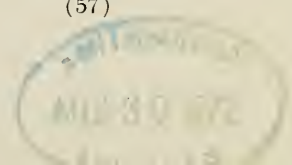
BY OSCAR L. CARTWRIGHT

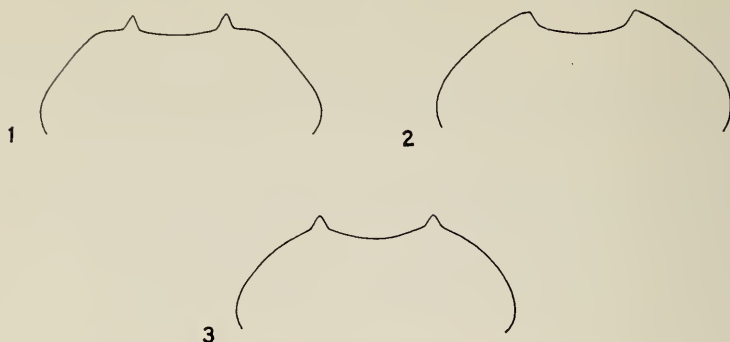
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In 1957, I described three new species and presented a key to the species in the crassulus group of American *Aphodius*, *Coleopterists' Bulletin*, 11: 55-61. Two additional species are described below and placed in a revised key. All of the species are found in and under deer droppings in shady woods.

KEY TO SPECIES

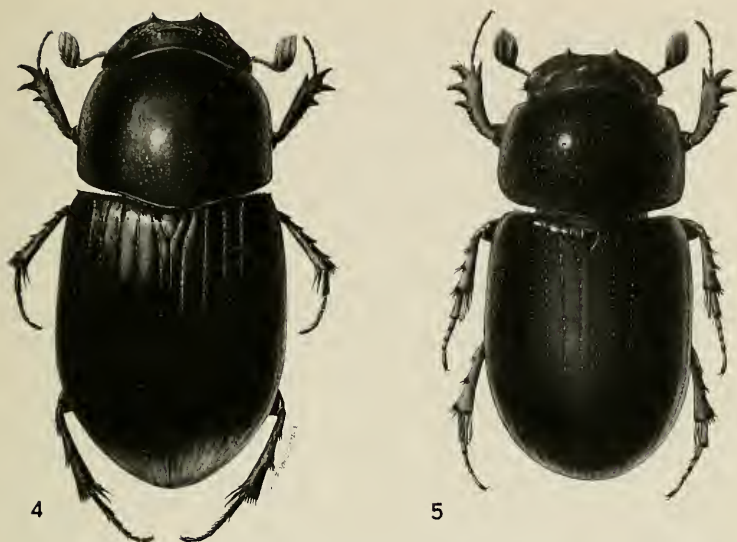
1. Clypeus with two triangular teeth or angulations ..... 2  
Clypeus with four equal, spiniform, slightly recurved teeth;  
Texas ..... *bottimeri* Cartwright
2. Elytral intervals concave, especially at the shoulders: New Jersey ..... *odocoilus* Robinson  
Elytral intervals flat or convex ..... 3
3. Terminal abdominal sternum with a distinct concavity; mountains of North and South Carolina ..... *brimleyi* Cartwright  
Terminal abdominal sternum without concavity ..... 4
4. Elytral striae noticeably wider over apical declivity ..... 5  
Elytral striae not noticeably wider over apical declivity ..... 6
5. Elytral intervals very moderately convex on disc, strongly convex over apical declivity; South Carolina, Georgia, Florida .....  
..... *crassulus* Horn  
Elytral intervals flat on disc, only moderately convex over apical declivity; Maryland ..... *silvanicus* new species
6. Clypeal margin slightly angulate outside of the very sharp, very distinct teeth (Fig. 1), a small species 3.3 to 3.7 mm; Mexico ..... *spiniclypeus* Hinton  
Clypeal margin not angulate outside the clypeal teeth (Fig. 3) ..... 7





FIGS. 1-3. *Aphodius spiniclypeus* Hinton, clypeal margin; *Aphodius crassuloides* Fall, clypeal margin; *Aphodius texensis* new species, clypeal margin.

7. Clypeus with small, rounded, well-separated tubercles, otherwise relatively smooth ..... 8  
    Clypeus strongly rugose-punctate ..... 9
8. Basal tooth of anterior tibia slightly nearer base than apex; antennae light colored; striae punctures and crenations of elytral intervals not or scarcely evident over apical declivity; first four striae subparallel, only slightly converging at apex; South Carolina, Florida ..... *windsori* Cartwright  
    Basal tooth of anterior tibia nearer apex than base; antennae fuscous; striae punctures of elytra very slightly larger and more noticeable over apical declivity than on disc; South Carolina to Texas ..... *lodingi* Cartwright
9. Elytra relatively short, four-fifths as wide as long; pronotal punctures relatively coarse, dense at sides and in anterior angles where they are separated by less than the diameter of the fine punctures, often some merging together; Texas .....  
    ..... *abusus* Fall  
    Elytra longer, three-fourths as wide as long, pronotal punctures more widely separated in anterior angles ..... 10
10. Apex of elytra always alutaceous; Oklahoma, North Dakota .....  
    ..... *pseudabusus* Cartwright  
    Apex of elytra not alutaceous ..... 11
11. Clypeal teeth with clypeal margin forming outer side of the tooth, joining the tooth at tip rather than base (Fig. 2); New Mexico, Arizona ..... *crassuloides* Fall  
    Clypeal teeth set off from margin as complete, distinct, triangular teeth (Fig. 3); small species, 2.9 to 4.1 mm; Texas .....  
    ..... *texensis* new species



FIGS. 4-5. *Aphodius silvanicus* new species; *Aphodius texensis* new species.

***Aphodius silvanicus* new species**

Figure 4

*Holotype male*: USNM No. 71962. Length 4.8 mm, width 2.3 mm. Shining black, strongly convex, elongate oval. Clypeal margin feebly reflexed, widely, moderately emarginate anteriorly between two strong, sharp, triangular teeth, sides feebly sinuate; genae obtusely rounded. Clypeal surface shining, punctate-tuberculate, gradually less roughened and noticeably alutaceous to frontal suture where the punctures are very shallow, alutaceous within and separated by their own diameter or less. Three weak tubercles on the frontal suture, front with wide band of moderate punctures, separated generally by less than their diameters. Pronotum strongly convex, length 1.5 mm, width at posterior angles, 2.0 mm, sides and base finely margined, all angles obtusely rounded, base sinuate; surface punctate throughout, punctures nearly uniform in size on disc where separated by one or two times their diameters, gradually much closer and discernably of two sizes outward to sides. Elytra very convex, length 2.8 mm, width 2.3 mm, striae rather wide and deep, striae punctures deep, very slightly crenating sides of intervals, separated by four times their diameters on disc, striae gradually wider over apical declivity and the punctures tend to disappear. Intervals flat, with scattered very fine punctures on disc, weakly convex over apical

declivity. Mesosternum weakly convex between the coxae. Metasternum with fine to moderate scattered punctures, at least some of them very finely setigerous. Abdominal sterna finely, closely, shallowly, setigerously punctate; sterna otherwise alutaceous with posterior edge very narrowly smooth and shining. The posterior of three anterior tibial teeth nearer apex than base, anterior face of tibia smooth, impunctate; first tarsal segment shorter than the second. Middle and hind femora finely, closely punctate. Posterior tibial fringe with short equal setae, first tarsal segment slightly longer than long spur, equal to following three combined.

*Allotype*: Length 4.5 mm, width 2.3 mm. The pronotum has a narrow impunctate midline but I noticed no other difference.

*Type-locality*: Shelltown, Somerset County, Maryland. Holotype and one paratype collected under deer droppings, 11 April 1965 by E. J. Ford, Jr. Allotype and one paratype same locality, 29 April 1969, under deer droppings, by Robert Gordon.

*Remarks*: *Aphodius silvanicus* is very similar to *A. crassulus* Horn but differs in the slightly finer pronotal punctures and the much less disparity in size of punctures over lateral areas of the pronotum. The elytral intervals over the disc are flat to very slightly concave and only moderately convex over the apical declivity, while in *crassulus* the intervals are moderately convex on the disc to very strongly convex over the declivity.

#### ***Aphodius texensis* new species**

##### Figure 5

*Holotype male*: USNM No. 71963. Length 3.7 mm, width 1.9 mm. Shining; pronotum brownish black, convex, elongate oval; head and elytra dark reddish brown. Clypeal margin finely reflexed, medially widely, weakly emarginate between strong, sharp, triangular teeth, sides weakly arcuate; genae very obtusely rounded, not prominent; clypeal surface generally roughly, closely, moderately punctate, an obscure transverse median ridge, the punctures less numerous above the ridge. Three low tubercles, the middle one binodose, on frontal suture. Front with transverse band of very moderate punctures separated by one or more times their diameters. Pronotum convex; length 1.2 mm, width 1.5 mm; lateral and basal margins finely margined; anterior angles rounded; posterior angles very obtusely rounded; sides weakly arcuate; base very slightly sinuate; surface quite uniformly punctate; punctures on disc very moderate, separated by one to three times their diameters, laterally much closer and distinctly of two sizes, the larger punctures up to twice the diameter of the smaller. Elytra convex; length 2.3 mm, width 1.9 mm; striae rather fine, not deep; strial punctures crenating sides of intervals, separated by about four times their diameters; intervals nearly flat on disc with a row of very fine punctures along each side; striae not noticeably wider over apical declivity and the intervals here only weakly convex. Mesosternum weakly convex between the coxae.

Metasternum vaguely longitudinally depressed medially, scattered fine punctures separated by one or more times their diameters. Abdominal sterna noticeably hairy, the very fine hair from very fine punctures, surface otherwise finely alutaceous. Foretibiae with three teeth, the upper about midway between base and apex; face of tibia smooth; first tarsal segment shorter than the second. Middle and hind femora with scattered very fine punctures. Posterior tibiae with fringe of short equal setae; first tarsal segment shorter than long spur, shorter than three following segments combined.

*Allotype*: Length 3.9 mm, width 1.9 mm. I was unable to determine sex without dissection. Allotype and 28 paratypes vary from 2.9 mm to 4.1 mm. In some the transverse clypeal ridge is more distinct as are the three frontal sutural tubercles, with the middle tubercle more or less binodose. I found no other variation.

*Type-locality*: Kerrville, Texas, 20 September 1951, O. L. Cartwright.

*Paratype data*: Allotype and 3, collected with holotype; 1, Kerrville, 27 March 1906, F. C. Pratt; 1, Kerrville, 30 May 1906, F. C. Pratt; 1, Kerrville, 28 September 1948, L. J. Bottimer; 1, Camp Stanley, Texas, 16 March 1953, L. J. Bottimer; 17, Junction, Kimble County, Texas, 29, 30 March 1967, A. and M. E. Blanchard; 2, Texas, Belfrage, M. Robinson Collection; 1, Texas, M. Robinson Collection; 1, New Braunfels, Texas, 11 May 1910, F. C. Pratt, M. Robinson Collection; 1, Las Vegas H S, New Mexico, 14 August, Barber and Schwarz Coll.

*Remarks*: *Aphodius texensis* is close to *A. crassuloides* Fall but averages smaller in length with the clypeal teeth projecting as distinct triangles. In *A. crassuloides* the clypeal margin forms the outside of the tooth. It does not join the tooth at base but forms an almost straight line to the tip of the tooth, Figure 2.

Illustrations were drawn by Mrs. Elsie Froeschner. Dissections of the type-specimens were made by Dr. Paul J. Spangler.